

t26_groeb_3

(TMPbDZNj86vuxcqUxfmWgiTZJzC43s26TQK)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_pre_poly : \iota \Rightarrow \iota$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v4_relat_2 : \iota \Rightarrow o$ be given. Let $v6_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_polynom1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k2_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_groeb_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_groeb_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_groeb_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_groeb_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_valued_0 : \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Let $r1_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v1_partfun1 X1 (k15_pre_poly \\
 & \quad X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 X1) \wedge ((\\
 & \quad v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\
 & \quad X0) (k15_pre_poly X0)))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge \\
 & \quad ((v13_algstr_0 X2) \wedge (v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l2_algstr_0 \\
 & \quad X2)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k15_pre_poly \\
 & \quad X0) (u1_struct_0 X2)) \wedge ((v1_polynom1 X3 (k15_pre_poly X0) X2) \wedge \\
 & \quad (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly X0) (\\
 & \quad u1_struct_0 X2)))))))))) \Rightarrow (\forall X4.(m1_subset_1 X4 k5_numbers) \Rightarrow \\
 & \quad ((r1_xxreal_0 X4 (k5_card_1 (k2_polynom1 (k15_pre_poly X0) X2 \\
 & \quad X3))) \Rightarrow ((k2_polynom1 (k15_pre_poly X0) X2 (k5_groeb_3 X0 X1 X2 X3 \\
 & \quad X4) = k3_groeb_3 X0 X1 X2 X3 X4) \wedge (k2_polynom1 (k15_pre_poly X0) X2 \\
 & \quad (k6_groeb_3 X0 X1 X2 X3 X4) = k4_groeb_3 X0 X1 X2 X3 X4))))))
 \end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly\ X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge ((v13_algstr_0\ X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge (l2_algstr_0\ X2)))))) \Rightarrow (\forall X3.((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ k5_numbers) \Rightarrow ((r1_xxreal_0\ X4\ (k5_card_1\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3)) \Rightarrow ((r1_tarski\ (k4_groeb_3\ X0\ X1\ X2\ X3\ X4)\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3)) \wedge ((k5_card_1\ (k4_groeb_3\ X0\ X1\ X2\ X3\ X4) = k6_xcmplx_0\ (k5_card_1\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3))\ X4) \wedge (\forall X5.((v1_relat_1\ X5) \wedge ((v4_relat_1\ X5\ X0) \wedge ((v1_funct_1\ X5) \wedge ((v1_partfun1\ X5\ X0) \wedge ((v4_valued_0\ X5) \wedge (v2_pre_poly\ X5)))))) \Rightarrow (\forall X6.((v1_relat_1\ X6) \wedge ((v4_relat_1\ X6\ X0) \wedge ((v1_funct_1\ X6) \wedge ((v1_partfun1\ X6\ X0) \wedge ((v4_valued_0\ X6) \wedge (v2_pre_poly\ X6)))))) \Rightarrow (((X5 \in k4_groeb_3\ X0\ X1\ X2\ X3\ X4) \wedge ((X6 \in k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3) \wedge (r1_termord\ X0\ X1\ X6\ X5))) \Rightarrow (X6 \in k4_groeb_3\ X0\ X1\ X2\ X3\ X4))))))))))
\end{aligned}
\tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_ordinal1\ X0) \wedge ((v1_partfun1\ X1\ (k15_pre_poly\ X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly\ X0)))))))))) \wedge ((\neg v2_struct_0\ X2) \wedge ((v13_algstr_0\ X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge (l2_algstr_0\ X2)))))) \wedge ((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (u1_struct_0\ X2)))))) \wedge (m1_subset_1\ X4\ k5_numbers)))))) \Rightarrow ((v1_finset_1\ (k3_groeb_3\ X0\ X1\ X2\ X3\ X4)) \wedge (m1_subset_1\ (k3_groeb_3\ X0\ X1\ X2\ X3\ X4)\ (k1_zfmisc_1\ (k15_pre_poly\ X0))))
\end{aligned}
\tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& \quad v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge \\
& \quad ((v13_algstr_0\ X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge (l2_algstr_0 \\
& \quad \quad X2)))))) \Rightarrow (\forall X3.((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly \\
& \quad X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge \\
& \quad (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (\\
& \quad \quad u1_struct_0\ X2)))))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ k5_numbers) \Rightarrow \\
& \quad ((r1_xxreal_0\ X4\ (k5_card_1\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2 \\
& \quad \quad X3))) \Rightarrow (\forall X5.((v1_finset_1\ X5) \wedge (m1_subset_1\ X5\ (k1_zfmisc_1 \\
& \quad (k15_pre_poly\ X0)))) \Rightarrow ((X5 = k3_groeb_3\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow ((r1_tarski \\
& \quad \quad X5\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3)) \wedge ((k5_card_1\ X5 = X4) \wedge \\
& \quad \quad (\forall X6.((v1_relat_1\ X6) \wedge ((v4_relat_1\ X6\ X0) \wedge ((v1_funct_1 \\
& \quad \quad X6) \wedge ((v1_partfun1\ X6\ X0) \wedge ((v4_valued_0\ X6) \wedge (v2_pre_poly\ X6)))))) \Rightarrow \\
& \quad \quad (\forall X7.((v1_relat_1\ X7) \wedge ((v4_relat_1\ X7\ X0) \wedge ((v1_funct_1 \\
& \quad \quad X7) \wedge ((v1_partfun1\ X7\ X0) \wedge ((v4_valued_0\ X7) \wedge (v2_pre_poly\ X7)))))) \Rightarrow \\
& \quad \quad (((X6 \in X5) \wedge ((X7 \in k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3)) \wedge (r1_termord \\
& \quad \quad \quad X0\ X1\ X6\ X7))) \Rightarrow (X7 \in X5))))))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& \quad X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge ((\\
& \quad v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& \quad \quad X0)\ (k15_pre_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0\ X2) \wedge \\
& \quad ((v13_algstr_0\ X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge (l2_algstr_0 \\
& \quad \quad X2)))))) \Rightarrow (\forall X3.((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k15_pre_poly \\
& \quad X0)\ (u1_struct_0\ X2)) \wedge ((v1_polynom1\ X3\ (k15_pre_poly\ X0)\ X2) \wedge \\
& \quad (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (\\
& \quad \quad u1_struct_0\ X2)))))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ k5_numbers) \Rightarrow \\
& \quad ((r1_xxreal_0\ X4\ (k5_card_1\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2 \\
& \quad \quad X3))) \Rightarrow ((r1_tarski\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ (k5_groeb_3 \\
& \quad \quad X0\ X1\ X2\ X3\ X4))\ (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ X3)) \wedge (r1_tarski \\
& \quad \quad (k2_polynom1\ (k15_pre_poly\ X0)\ X2\ (k6_groeb_3\ X0\ X1\ X2\ X3\ X4))\ (k2_polynom1 \\
& \quad \quad \quad (k15_pre_poly\ X0)\ X2\ X3))))))
\end{aligned}$$